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EXAMINER
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CANTELMO, GREGG

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/613,686

Applicant(s)

JIANG ET AL.

Examiner

Gregg Cantelmo

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1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) 42-75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/3/03; 10/27/03; 7/6/05 *H. Cantelmo*
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 42-75 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on April 17, 2006.
2. Applicant's election with traverse in the reply filed on April 17, 2006 is acknowledged. The traversal is on the ground(s) that the two groups are not independent and distinct. This is not found persuasive for the following reasons: a) as set forth in the previous office action, the product does not require the process as set forth in Group I and can be made by materially different processes other than that recited in Group I, with Applicant failing to provide support or evidence to show otherwise. A process of making and a product made by the process can be shown to be distinct inventions if either or both of the following can be shown: (A) that the process as claimed is not an obvious process of making the product and the process as claimed can be used to make \*\*>another materially different product<; or (B) that the product as claimed can be made by another \* materially different process. Allegations of different processes or products need not be documented. A product defined by the process by which it can be made is still a product claim (In re Bridgeford, 357 F.2d 679, 149 USPQ 55 (CCPA 1966)) and can be restricted from the process if the examiner can demonstrate that the product as claimed can be made by another materially different process; defining the product in terms of a process by which it is made is nothing more

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than a permissible technique that applicant may use to define the invention. See MPEP 806.05 (f).

Applicant has not convincingly traversed this requirement

Thus the search for the method is not coextensive with the search for the product and as set forth in the previous office action the product is held to be obtainable from other processes apart from that recited in Group I.

The requirement is still deemed proper and is therefore made FINAL.

***Information Disclosure Statement***

3. The information disclosure statements filed July 3, 2003; October 27, 2003; and June 13, 2005 have been placed in the application file and the information referred to therein has been considered as to the merits. In addition, the citing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. For example, U.S. Patent No. 6,482,543 listed on page 5 of the specification has not been considered since it has not been properly cited.

4. Note that JP 73012690 B, as cited in the PTO-892 corresponds to JP 48-012690.

***Drawings***

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the

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description: reference character 850 in Fig. 1, 125 in Fig. 2 are not found in the written description. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The term "dimensionally stabilized" in claim 1-41 is a relative term which renders the claim indefinite. The term "dimensionally stabilized" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification fails to give clear

bounds to the what the instant application appreciated as being dimensionally stabilized. The related disclosure does not clearly define this term and in the absence of a clear definition renders the term "dimensionally stabilized" indefinite since the extent of stabilization which falls under this claimed term is not specified.

b. Claims 17, 18, 35 and 36 contains the trademark/trade names CARBOPOL C940 (claims 17, 18, 35 and 36) and WATER-LOCK A-221 (claims 18 and 36). Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe particular binders and, accordingly, the identification/description is indefinite.

c. Claim 9 recites the limitation "step (d)" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 9 is directly dependent upon claim 5 which is directly dependent upon claim 1. Claims 1 and 5 fail to recite steps c or d, rather such steps are recited in claim 2. Therefore claim 9 lacks antecedent basis for step d since no step is recited in claim 9.

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- d. Claim 10 recites the limitation "said second fluid" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 10 is directly dependent upon claim 9 which is directly dependent upon claim 5 which is directly dependent upon claim 1. Claims 1, 5 and 9 fail to recite steps a second fluid, rather such steps are recited in claim 2. Therefore claim 9 lacks antecedent basis for a second fluid since there is no second fluid in any of claims 1, 5, 9 and 10.
- e. Claim 22 recites the limitation "the approximate shape of the anode cavity" in line 2. There is insufficient antecedent basis for this limitation in the claim.
- f. Claim 23 recites the limitation "the anode cavity" in lines 8-9. There is insufficient antecedent basis for this limitation in the claim;
- g. Regarding claim 22, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). See step a which recites a binder comprising an alcohol, such as polyvinyl alcohol.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 5. Claims 1, 3, 5, 8, 12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 56-116270 (JP '270).

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JP '270 discloses a method of forming an electrode for an alkaline cell comprising: forming a mixture comprising zinc, water a binder and PVA (abstract as applied to claims 1, 3, 5 and 12). The mixture is first molded before being dried (abstract as applied to claim 8). Absent sufficient clarity with respect to the term "dimensionally stabilized mass" it is held that the prior art of JP '270 upon drying produces a relative "dimensionally stabilized mass" (as applied to claim 1). The fluid is water (as discussed above and applied to claim 3). Drying is performed by heating (first page of JP '270, 2<sup>nd</sup> column, as applied to claims 1 and further to claim 14). The mixture can be stored in air (as applied to claim 12).

6. Claims 1, 3, 6, 8, 12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,784,406 (Kosta).

Kosta discloses a method of forming an anode for an alkaline cell comprising: forming a mixture comprising zinc particles, a polymeric binder dispersed in water which is subsequently dried (col. 5, ll. 1-12 as applied to claim 1). Absent sufficient clarity with respect to the term "dimensionally stabilized mass" it is held that the prior art of Kosta upon drying produces a relative "dimensionally stabilized mass". For example in Fig. 2 each electrode deposit 20 is held to be a dimensionally stabilized mass (as applied to claim 1). The binder acts to effectively glue the particles within the mass.

The fluid is water (as discussed above and applied to claim 3).

Kosta further teaches that the electrode formulation may additionally contain if desired small amounts of additional ingredients used for such purposes as maintaining uniform dispersion of active material particles during electrode construction, aiding the



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diffusion of battery electrolyte through the pores of the finally constructed electrodes, controlling viscosity during processing, controlling surface tension of battery electrolyte in the resultant electrode, controlling pot life, or for other reasons (sentence bridging columns 2 and 3). As shown in Figs. 1 and 2, the electrodes are solid masses. In addition by providing the masses through a drying oven, the masses are heated to a dried solid form. Furthermore the Kosta teaches that the electrode has pores. Thus the electrode of Kosta is a solid porous mass comprising the aforementioned zinc particles (as applied to claim 6).

The mass is shaped as shown in Figs. 1 and 2 prior to introducing the mass into a drying oven (Figs. 1 and 2 and col. 4, ll. 1-12 as applied to claim 8).

The mixture can be stored in air (as applied to claim 12). The mass is passed through an oven to dry the mixture and thus the drying is performed by heating the mass (as applied to claim 14).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2, 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta.

The teachings of Kosta have been discussed above and are incorporated herein.

The differences between claims 2, 4 and 11 and Kosta are that Kosta does not expressly teach of the alkaline cell and second fluid (claim 2) or of the second fluid being an aqueous alkaline electrolyte (claim 4), the electrolyte being KOH (claim 11).

Kosta further teaches that the electrode formulation may additionally contain if desired small amounts of additional ingredients used for such purposes as maintaining uniform dispersion of active material particles during electrode construction, aiding the diffusion of battery electrolyte through the pores of the finally constructed electrodes, controlling viscosity during processing, controlling surface tension of battery electrolyte

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in the resultant electrode, controlling pot life, or for other reasons (sentence bridging columns 2 and 3).

Thus Kosta, in the least, suggests that upon addition of an electrolyte to the battery in which the porous electrode is disposed, the pores will enable electrolyte diffusion within the electrode itself and thus permit the presence of a second fluid.

In addition Kosta discloses that the electrode formed can be used in an alkaline battery (col. 6, ll. 10-22). Of note Kosta provides a more descript example of an alkaline system in which the positive electrodes comprise manganese dioxide, the negative electrodes comprise zinc and the electrolyte substantially comprises a solution of KOH (col. 6, ll. 17-21).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by providing the porous solid electrode in a cell which is porous so that electrolyte can penetrate into the electrode whereby various cells in which the electrode can be disposed includes alkaline systems having an alkaline electrolyte such as KOH. The combination of which would obviously result in the additional steps of inserting the electrodes into the cell and thereafter adding the second fluid, or electrolyte into the cell, which would fill the pores in the electrode. Providing an electrode with electrolyte within the electrode itself improves the ionic conductivity of the entire electrode mass.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP 48-012690 (JP '690) or JP 55-030260 (JP '260).

The teachings of Kosta have been discussed above and are incorporated herein.

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The difference between claim 5 and Kosta is that Kosta does not expressly teach of the polymeric binder being polyvinylalcohol, i.e., PVA (claim 5).

Kosta teaches that any number of polymeric binders can be used as an additive for binding the zinc particles in the anode mass.

JP '690 discloses that PVA is a known binder material for zinc anodes which effectively binds the zinc particles into a molded anode body.

Alternatively JP '260 discloses using PVA as a binder in a zinc electrode to form an elastic solid.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by selecting the binder to be PVA since it would have provided a solid mold zinc anode. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP '690 or JP '260 as applied to claim 5 above, and further in view of U.S. Patent No. 5,538,813 (Li).

The difference between claim 13 and Kosta is that Kosta does not expressly teach of the polymeric binder being polyvinylalcohol, i.e., PVA of a molecular weight between 85000 and 146000.

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Li discloses that PVA binders are known in the art. PVA is commercially available in a wide range of molecular weights and it has been found that PVA obtained from Aldrich Chemical Company in the range of 80,000-140,000 molecular weight is a preferred material. It is to be understood that other molecular weights, such as in the range of 30,000-50,000 or 50,000-80,000 are also useful and other materials with even higher molecular weights may also be advantageously employed. Those of ordinary skill in the art of polymer science will readily understand that higher molecular weight polymers tend to be more structurally sound, whereas lower molecular weight polymers tend to be less rigid and more flexible (col. 3, line 66, through col. 4, line 8).

The selection of the desired MW of a PVA binder is dependent upon the extent to which the resultant structure is to be rigid or flexible.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by selecting the PVA molecular weight to be within a range from 30,000-140,000 or more or less dependent upon the desired degree of rigidity or flexibility of the resultant product. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Furthermore to provide for the desired elastic solids taught by each of JP '690 and JP '260, and in light of the teaching of Li with respect to how the molecular weight of PVA affects the flexibility/rigidity of a solidified object using PVA as a binder, one of ordinary

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skill in the polymer art would have recognized that PVAs having a MW between 85000 and 146000 would have provided suitable binder materials for the zinc anode to provide a molded solid having a degree of flexibility.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of U.S. Patent No. 3,542,596 (Arrance).

The teachings of Kosta have been discussed above and are incorporated herein.

The difference between claim 7 and Kosta is that Kosta does not expressly teach of at least substantially wrapping the mixture with a separator prior to drying the mixture.

First there is no apparent criticality of this preferred process embodiment as evident from the disclosure of the instant application which states:

“Optionally, a separator material can be wrapped around the wet zinc mass (wet preform). The wet zinc mass may be dried by placing it in free standing form, with or without separator material wrapped around it, in an oven exposed to ambient air. The wet zinc mass, with or without separator thereon, is heated desirably at a temperature between about 55 °C and 120 °C, for example, at a temperature of about 55 °C, to evaporate at least a portion of the water therein. It will be understood that the term dry or dried as used herein shall mean that the wet zinc mass is treated by heating and the like so that at least a portion of the free water therein is removed. Preferably, essentially all of the free water within the wet zinc mass is evaporated during the heating step thereby forming a dry, solid porous zinc mass (solid preform).

Arrance shows encasing the electrode in a separator (Fig.3 and col. 7, line 50 through col. 8, line 5).

This provides for a complete isolation of the electrode from the remaining electrochemical components of the cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by encasing the anode in a separator first, since it would have provided a suitable means for completely isolating the electrode from the remaining electrochemical components of the cell.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta.

The teachings of Kosta have been discussed above and are incorporated herein.

The difference between claim 9 and Kosta is that Kosta does not expressly teach of inserting the anode into the cell prior to adding the alkaline electrolyte.

Kosta, in the least, suggests that upon addition of an electrolyte to the battery in which the porous electrode is disposed, the pores will enable electrolyte diffusion within the electrode itself and thus permit the presence of a second fluid.

Adding electrolyte solution to the porous electrode prior to insertion of the porous electrode into the can would result in a loss of electrolyte from the anode during handling of the electrolyte-impregnated porous anode prior to and during insertion of the anode into the electrochemical cell.

The concept of providing the anode mass into the cell prior to the addition of the electrolyte is that it improves the electrolyte retention of the porous anode mixture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by first inserting the

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anode into the anode cavity in the electrochemical cell prior to the addition of the electrolyte since it would have improved the electrolytic retention of the porous anode.

Furthermore, if the anode is provided to include materials which cause swelling of the anode material it would be obvious to first disposed the anode in the cell before adding the anode-expanding electrolyte solution to the anode.

12. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil).

The teachings of Kosta have been discussed above and are incorporated herein.

The differences between claims 15-18 and Kosta are that Kosta does not expressly teach of the binder further comprising a crosslinked acrylic acid polymer gelling agent (claim 15), the binder further comprising a gelling agent comprising a starch graft copolymer of polyacrylic acid and polyacrylamide (claim 16), of the binder further comprising Carbopol C940 (claim 17) or of the binder further comprising a mixture of Carbopol C940 and Water-Lock A-221 (claim 18).

According to Byrs, it is known to provide both Carbopol C940 and Water-lock A-221 to a zinc anode in an alkaline cell (see col. 4, ll. 15-40 as applied to claims 16-18).

In order to maintain homogeneity within the anode of alkaline cells whereby anodic materials such as amalgamated zinc powders are kept uniformly dispersed for maximum electrochemical activity, such anodes are kept in a gelled state. Common gelling materials utilized in commercial cells include carboxymethylcellulose (CMC), starch graft copolymers such as Waterlock A-221 from Grain Processing Corporation,



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and polyacrylic acid such as Carbopol from B. F. Goodrich Co. Other gelling materials include cross-linked polyacrylamides such as described in U.S. Pat. No. 3,884,721, and cross linked CMC as described in U.S. Pat. No. 4,435,488 (see Bahary, col. 1, ll. 7-19 as applied to claims 15-18).

The gelling agents for the zinc slurry can be selected from a variety of known gelling agents activated by alkaline mixtures. Preferred gelling agents are substantially insoluble in the cell electrolyte so that the gelling agent does not migrate between the anode and cathode. The preferred gelling agents also do not lose water when the gelled zinc slurry is left in storage. Suitable gelling agents, for example, are carboxymethyl cellulose or crosslinked carboxymethyl cellulose, methyl cellulose, Xanthan gum, crosslinked polyacrylamides, crosslinked acrylic acid copolymers such as CARBOPOL C-940 from B.F. Goodrich Co., starch graft copolymers such as WATER-LOCK A-221 starch-graft copolymer of polyacrylic acid and polyacrylamide from Grain Processing Co., and alkali hydrolyzed polyacrylonitrile such as WATER-LOCK A 400 from Grain Processing Co. The gelling agent can be used alone or in mixture with other known gelling or thickening components. Although any of these gelling agents can be employed alone or in combination, at least one of the gelling agents may advantageously be selected from crosslinked acrylic acid polymer such as CARBOPOL C940 or SIGMA POLYGEL 4P gelling agents or a starch graft copolymer such as WATER-LOCK A-221 copolymer (see Chalilpoyil, col. 6, ll. 17-42 as applied to claims 15-18).

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Carbopol C-940 is a tradename for a chemical composition which is a crosslinked acrylic acid polymer gelling agent (as applied to claim 15).

Water-Lock A-221 is a tradename for a chemical composition which is a starch graft copolymer such as a starch graft copolymer of polyacrylic acid and polyacrylamide (as applied to claim 16).

The motivation for adding Carbopol and Water-Lock either alone or in combination to the zinc anode is to maintain homogeneity of within the anode mixture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by providing Carbopol and Water-Lock, either alone or in combination, to the anode mass since it would have maintained the homogeneity of the anode mixture. Furthermore both Carbopol and Water-Lock are recognized zinc anode additives and the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

13. Claims 9, 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of as applied to claims 15-18 above, and further in view of U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil).

As discussed above the teachings of Kosta and provide reasonable motivation for first inserting the anode into the cell prior to adding the electrolyte solution.

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Each of Byrs, Bahary and Chalilpoyil disclose of the advantages of providing a gelling agent or mixture of agents to the anode material, discussed above and incorporated herein.

The motivation for adding Carbopol and Water-Lock either alone or in combination to the zinc anode is to maintain homogeneity of within the anode mixture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by providing Carbopol and Water-Lock, either alone or in combination, to the anode mass since it would have maintained the homogeneity of the anode mixture. Furthermore both Carbopol and Water-Lock are recognized zinc anode additives and the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07 (as applied to claim 10).

The addition of the aqueous alkaline electrolyte to the anode having a gelling agent therein will absorb the electrolyte and water and effectively swell upon the electrolyte addition. Thus the resultant process will obviously result in an expansion of the anode.

In providing a swelling agent to the anode, it would have further been obvious to first insert the anode into the electrochemical cell prior to the addition of the electrolyte solution into the anode. Adding the electrolyte solution to the swelling agent in the anode results in an expansion of the electrolyte-impregnated anode. If the anode is first

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inserted into the cell before the electrolyte is added, this optimizes the spatial relationship between the anode in the cell as well as, upon swelling of the anode predisposed in the cell, improves contact between the anode, separator and cathode (as applied to claim 9).

Lastly considering the previous two issues, it would have further been obvious to mold the mixture into the approximate shape of the anode cavity so that it would fit in the required anode cavity space within the electrochemical cell and upon the addition of the electrolyte will swell and thus improve the electrical contact between the anode, separator and cathode (as applied to claim 22).

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of U.S. Patent No. 5,240,793 (Glaeser).

The teachings of Kosta have been discussed above and are incorporated herein.

The difference between claim 19 and Kosta is that Kosta does not expressly teach of the anode mixture further comprising indium in total amount between 200 ppm and 1000 ppm of the zinc.

Glaeser discloses adding indium in a preferred range from 100-1000 ppm to the zinc amalgam will significantly reduce the lead content in the anode and decrease the toxicity of the zinc anode.

The motivation for adding indium in the range from 100-1000 ppm is to reduce the lead content in the zinc amalgam and thus decrease the toxicity of the zinc anode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by adding indium to

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the zinc amalgam in an amount from 100-1000 ppm since it would have reduced the lead content in the anode and decreased the toxicity of the zinc anode.

15. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either U.S. Patent No. 4,195,120 (Rossler) or U.S. Patent No. 4,777,100 (Chalilpoyil '100).

The teachings of Kosta have been discussed above and are incorporated herein.

The differences between claims 20-21 and Kosta are that Kosta does not expressly teach of the mixture further comprising a surfactant (claim 20), the surfactant being an organic phosphate ester (claim 21).

Use of organic phosphate ester surfactants in anode mixtures is well known in the art as shown by either Rossler or Chalilpoyil '100.

Hydrogen evolution in cells having zinc anodes is reduced or eliminated by incorporating in the cell a surfactant which is a complex phosphate ester of a surfactant of the ethylene oxide-adduct type. This surfactant is added in such a manner that, directly or upon wetting of the anode by the electrolyte, there is an adsorption of surfactant on the surface of the zinc anode material, whereby hydrogen evolution is inhibited. The surfactant is desirably present in the cell in an amount of from 0.001% to 5% by weight of the zinc component of the cell (see Rossler, abstract).

Similarly the utilization of an organic phosphate ester surfactant such as GAFAC RA600 with polycrystalline zinc amalgam anodes results in about a 4-fold reduction of gassing (see Chalilpoyil '100, col. 3, ll. 17-20).

The motivation for adding an organic phosphate ester surfactant to a zinc anode is to reduce hydrogen evolution at the anode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by adding an organic phosphate ester surfactant to the zinc anode since it would have reduced the evolution of gases, such as hydrogen, at the anode. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

16. Claims 23-25, 28-30, 32 and 40-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP '690 or JP '260 and U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil).

Kosta discloses a method of forming an anode for an alkaline cell comprising: forming a mixture comprising zinc particles, a polymeric binder dispersed in water which is subsequently dried (col. 5, ll. 1-12 as applied to claim 23). Absent sufficient clarity with respect to the term "dimensionally stabilized mass" it is held that the prior art of Kosta upon drying produces a relative "dimensionally stabilized mass". For example in Fig. 2 each electrode deposit 20 is held to be a dimensionally stabilized mass (as applied to claim 23). The fluid is water (as discussed above and applied to claim 23).

Kosta further teaches that the electrode formulation may additionally contain if desired small amounts of additional ingredients used for such purposes as maintaining

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uniform dispersion of active material particles during electrode construction, aiding the diffusion of battery electrolyte through the pores of the finally constructed electrodes, controlling viscosity during processing, controlling surface tension of battery electrolyte in the resultant electrode, controlling pot life, or for other reasons (sentence bridging columns 2 and 3). As shown in Figs. 1 and 2, the electrodes are solid masses. In addition by providing the masses through a drying oven, the masses are heated to a dried solid form. Furthermore the Kosta teaches that the electrode has pores. Thus the electrode of Kosta is a solid porous mass comprising the aforementioned zinc particles (as applied to claim 25).

The mass is shaped as shown in Figs. 1 and 2 prior to introducing the mass into a drying oven (Figs. 1 and 2 and col. 4, ll. 1-12 as applied to claim 28).

The mixture can be stored in air (as applied to claim 40).

The mass is passed through an oven to dry the mixture and thus the drying is performed by heating the mass (as applied to claim 30).

The differences between the claims and Kosta are that Kosta does not teach of the binder being an alcohol such as PVA (claim 23), of cell being an alkaline cell and inserting the mass into the anode cavity of the alkaline cell, of adding fluid to the anode cavity whereby the fluid is absorbed by the mass (claim 23); or of the second fluid being an aqueous alkaline electrolyte (claim 24), the electrolyte being KOH (claim 29); expressly teach of the binder further comprising a gelling agent (claim 32), the binder being crosslinked acrylic acid polymer gelling agent (claim 33), the binder further comprising a gelling agent comprising a starch graft copolymer of polyacrylic acid and

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polyacrylamide (claim 34), of the binder further comprising Carbopol C940 (claim 35) or of the binder further comprising a mixture of Carbopol C940 and Water-Lock A-221 (claim 36).

With respect to the use of PVA:

Kosta teaches that any number of polymeric binders can be used as an additive for binding the zinc particles in the anode mass.

JP '690 discloses that PVA is a known binder material for zinc anodes which effectively binds the zinc particles into a molded anode body.

Alternatively JP '260 discloses using PVA as a binder in a zinc electrode to form an elastic solid.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by selecting the binder to be PVA since it would have provided a solid mold zinc anode. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

With respect to the particular cell type being an alkaline cell and the anode being a porous anode:

Kosta further teaches that the electrode formulation may additionally contain if desired small amounts of additional ingredients used for such purposes as maintaining uniform dispersion of active material particles during electrode construction, aiding the



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diffusion of battery electrolyte through the pores of the finally constructed electrodes, controlling viscosity during processing, controlling surface tension of battery electrolyte in the resultant electrode, controlling pot life, or for other reasons (sentence bridging columns 2 and 3).

Thus Kosta, in the least, suggests that upon addition of an electrolyte to the battery in which the porous electrode is disposed, the pores will enable electrolyte diffusion within the electrode itself and thus permit the presence of a second fluid.

In addition Kosta discloses that the electrode formed can be used in an alkaline battery (col. 6, ll. 10-22). Of note Kosta provides a more descript example of an alkaline system in which the positive electrodes comprise manganese dioxide, the negative electrodes comprise zinc and the electrolyte substantially comprises a solution of KOH (col. 6, ll. 17-21).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by providing the porous solid electrode in a cell which is porous so that electrolyte can penetrate into the electrode whereby various cells in which the electrode can be disposed includes alkaline systems having an alkaline electrolyte such as KOH. The combination of which would obviously result in the additional steps of inserting the electrodes into the cell and thereafter adding the second fluid, or electrolyte into the cell, which would fill the pores in the electrode. Providing an electrode with electrolyte within the electrode itself improves the ionic conductivity of the entire electrode mass.

With respect to the addition of a gelling agent:

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The differences between claims 32-36 and Kosta are that Kosta does not According to Byrs, it is known to provide both Carbopol C940 and Water-lock A-221 to a zinc anode in an alkaline cell (see col. 4, ll. 15-40 as applied to claims 32-36).

In order to maintain homogeneity within the anode of alkaline cells whereby anodic materials such as amalgamated zinc powders are kept uniformly dispersed for maximum electrochemical activity; such anodes are kept in a gelled state. Common gelling materials utilized in commercial cells include carboxymethylcellulose (CMC), starch graft copolymers such as Waterlock A-221 from Grain Processing Corporation, and polyacrylic acid such as Carbopol from B. F. Goodrich Co. Other gelling materials include cross-linked polyacrylamides such as described in U.S. Pat. No. 3,884,721, and cross linked CMC as described in U.S. Pat. No. 4,435,488 (see Bahary, col. 1, ll. 7-19 as applied to claims 32-36).

The gelling agents for the zinc slurry can be selected from a variety of known gelling agents activated by alkaline mixtures. Preferred gelling agents are substantially insoluble in the cell electrolyte so that the gelling agent does not migrate between the anode and cathode. The preferred gelling agents also do not lose water when the gelled zinc slurry is left in storage. Suitable gelling agents, for example, are carboxymethyl cellulose or crosslinked carboxymethyl cellulose, methyl cellulose, Xanthan gum, crosslinked polyacrylamides, crosslinked acrylic acid copolymers such as CARBOPOL C-940 from B.F. Goodrich Co., starch graft copolymers such as WATER-LOCK A-221 starch-graft copolymer of polyacrylic acid and polyacrylamide from Grain Processing Co., and alkali hydrolyzed polyacrylonitrile such as WATER-LOCK A 400

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from Grain Processing Co. The gelling agent can be used alone or in mixture with other known gelling or thickening components. Although any of these gelling agents can be employed alone or in combination, at least one of the gelling agents may advantageously be selected from crosslinked acrylic acid polymer such as CARBOPOL C940 or SIGMA POLYGEL 4P gelling agents or a starch graft copolymer such as WATER-LOCK A-221 copolymer (see Chalilpoyil, col. 6, ll. 17-42 as applied to claims 32-36).

Carbopol C-940 is a tradename for a chemical composition which is a crosslinked acrylic acid polymer gelling agent (as applied to claim 33).

Water-Lock A-221 is a tradename for a chemical composition which is a starch graft copolymer such as a starch graft copolymer of polyacrylic acid and polyacrylamide (as applied to claim 34).

The motivation for adding Carbopol and Water-Lock either alone or in combination to the zinc anode is to maintain homogeneity of within the anode mixture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by providing Carbopol and Water-Lock, either alone or in combination, to the anode mass since it would have maintained the homogeneity of the anode mixture. Furthermore both Carbopol and Water-Lock are recognized zinc anode additives and the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ

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297 (1945) See also In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07 (as applied to claims 32-36).

With respect to the expansion of the anode:

The addition of the aqueous alkaline electrolyte to the anode having a gelling agent therein will absorb the electrolyte and water and effectively swell upon the electrolyte addition. Thus the resultant process will obviously result in an expansion of the anode.

With respect to first adding the anode into the cell before adding the electrolyte:

In providing a swelling agent to the anode, it would have further been obvious to first insert the anode into the electrochemical cell prior to the addition of the electrolyte solution into the anode. Adding the electrolyte solution to the swelling agent in the anode results in an expansion of the electrolyte-impregnated anode. If the anode is first inserted into the cell before the electrolyte is added, this optimizes the spatial relationship between the anode in the cell as well as, upon swelling of the anode predisposed in the cell, improves contact between the anode, separator and cathode (as applied to claim 23).

With respect to molding the mixture into the approximate shape of the anode cavity:

Lastly considering the previous two issues, it would have further been obvious to mold the mixture into the approximate shape of the anode cavity so that it would fit in the required anode cavity space within the electrochemical cell and upon the addition of the electrolyte will swell and thus improve the electrical contact between the anode, separator and cathode (as applied to claim 41).

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17. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP '690 or JP '260 and U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil) as applied to claim 23 above, and further in view of U.S. Patent No. 5,538,813 (Li).

The difference between claim 31 and Kosta is that Kosta does not expressly teach of the polymeric binder being polyvinylalcohol, i.e., PVA of a molecular weight between 85000 and 146000.

Li discloses that PVA binders are known in the art. PVA is commercially available in a wide range of molecular weights and it has been found that PVA obtained from Aldrich Chemical Company in the range of 80,000-140,000 molecular weight is a preferred material. It is to be understood that other molecular weights, such as in the range of 30,000-50,000 or 50,000-80,000 are also useful and other materials with even higher molecular weights may also be advantageously employed. Those of ordinary skill in the art of polymer science will readily understand that higher molecular weight polymers tend to be more structurally sound, whereas lower molecular weight polymers tend to be less rigid and more flexible (col. 3, line 66, through col. 4, line 8).

The selection of the desired MW of a PVA binder is dependent upon the extent to which the resultant structure is to be rigid or flexible.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by selecting the PVA molecular weight to be within a range from 30,000-140,000 or more or less dependent upon the desired degree of rigidity or flexibility of the resultant product. Generally,

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differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Furthermore to provide for the desired elastic solids taught by each of JP '690 and JP '260, and in light of the teaching of Li with respect to how the molecular weight of PVA affects the flexibility/rigidity of a solidified object using PVA as a binder, one of ordinary skill in the polymer art would have recognized that PVAs having a MW between 85000 and 146000 would have provided suitable binder materials for the zinc anode to provide a molded solid having a degree of flexibility.

18. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP '690 or JP '260 and U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil) as applied to claims 23 above and in further view of U.S. Patent No. 5,240,793 (Glaeser).

The difference between claim 37 and Kosta is that Kosta does not expressly teach of the anode mixture further comprising indium in total amount between 200 ppm and 1000 ppm of the zinc.

Glaeser discloses adding indium in a preferred range from 100-1000 ppm to the zinc amalgam will significantly reduce the lead content in the anode and decrease the toxicity of the zinc anode.

The motivation for adding indium in the range from 100-1000 ppm is to reduce the lead content in the zinc amalgam and thus decrease the toxicity of the zinc anode.

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Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by adding indium to the zinc amalgam in an amount from 100-1000 ppm since it would have reduced the lead content in the anode and decreased the toxicity of the zinc anode.

19. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP '690 or JP '260 and U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil) as applied to claims 23 above and in further view of either U.S. Patent No. 4,195,120 (Rossler) or U.S. Patent No. 4,777,100 (Chalilpoyil '100).

The differences between claims 38-39 and Kosta are that Kosta does not expressly teach of the mixture further comprising a surfactant (claim 38), the surfactant being an organic phosphate ester (claim 39).

Use of organic phosphate ester surfactants in anode mixtures is well known in the art as shown by either Rossler or Chalilpoyil '100.

Hydrogen evolution in cells having zinc anodes is reduced or eliminated by incorporating in the cell a surfactant which is a complex phosphate ester of a surfactant of the ethylene oxide-adduct type. This surfactant is added in such a manner that, directly or upon wetting of the anode by the electrolyte, there is an adsorption of surfactant on the surface of the zinc anode material, whereby hydrogen evolution is inhibited. The surfactant is desirably present in the cell in an amount of from 0.001% to 5% by weight of the zinc component of the cell (see Rossler, abstract).

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Similarly the utilization of an organic phosphate ester surfactant such as GAFAC RA600 with polycrystalline zinc amalgam anodes results in about a 4-fold reduction of gassing (see Chalilpoyil '100, col. 3, ll. 17-20).

The motivation for adding an organic phosphate ester surfactant to a zinc anode is to reduce hydrogen evolution at the anode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by adding an organic phosphate ester surfactant to the zinc anode since it would have reduced the evolution of gases, such as hydrogen, at the anode. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

20. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosta in view of either JP '690 or JP '260 and U.S. Patent No. 6,251,539 (Byrs) and either U.S. Patent No. 4,563,404 (Bahary) or U.S. Patent No. 5,401,590 (Chalilpoyil) as applied to claims 23 above and in further view of U.S. Patent No. 3,542,596 (Arrance).

The teachings of Kosta have been discussed above and are incorporated herein.

The difference between claim 27 and Kosta is that Kosta does not expressly teach of at least substantially wrapping the mixture with a separator prior to drying the mixture.

First there is no apparent criticality of this preferred process embodiment as evident from the disclosure of the instant application which states:



"Optionally, a separator material can be wrapped around the wet zinc mass (wet preform). The wet zinc mass may be dried by placing it in free standing form, with or without separator material wrapped around it, in an oven exposed to ambient air. The wet zinc mass, with or without separator thereon, is heated desirably at a temperature between about 55 °C and 120 °C, for example, at a temperature of about 55 °C, to evaporate at least a portion of the water therein. It will be understood that the term dry or dried as used herein shall mean that the wet zinc mass is treated by heating and the like so that at least a portion of the free water therein is removed. Preferably, essentially all of the free water within the wet zinc mass is evaporated during the heating step thereby forming a dry, solid porous zinc mass (solid preform).

Arrance shows encasing the electrode in a separator (Fig.3 and col. 7, line 50 through col. 8, line 5).

This provides for a complete isolation of the electrode from the remaining electrochemical components of the cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kosta by encasing the anode in a separator first, since it would have provided a suitable means for completely isolating the electrode from the remaining electrochemical components of the cell.

### ***Double Patenting***

21. Claims 1, 3-6, 8, and 10-21 of this application conflict with claims 1, 3-7, 9-20 of Application No. 10/613,681. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such

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claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application.

Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

22. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

23. Claims 1, 3-6, 8, 10-21 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 3-7, 9-20 of copending Application No. 10/613,681. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The claimed method of claims 1, 3-6, 8 and 10-21 is identical in scope with corresponding claims 1, 3-7 and 9-20 of copending Application No. 10/613,681.

Recitation of the intended type of cell (instant application recites for use in an alkaline cell whereas copending Application No. 10/613,681 recites for use in a zinc/air cell) is not accorded patentable weight in the corresponding claims since these method claims do not breathe life into the intended types of batteries.

24. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

25. Claims 1-41 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claims 1-39 of

copending Application No. 10/613,681. Although the conflicting claims are not identical, they are not patentably distinct from each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The claimed method of claims 1-41 of the instant application are further held to be obvious over claims 1-40 of copending Application No. 10/613,681. For those claims which positively give life to the types of cells, it is held that one of ordinary skill in the art would have recognized that the claimed invention, to an alkaline cell having a zinc anode would have been directed to a zinc/air alkaline cell.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gc  
May 1, 2006

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745